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PATENT
Docket No. 115.00110101IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	JAMIESON et al.)	Group Art Unit:	2174
)		
Serial No.:	09/346,412)	Examiner:	M.T. TRAN
Confirmation No.:	2387)		
)		
Filed:	July 1, 1999)		
)		
For:	PROCESS VARIABLE GAUGE INTERFACE AND METHODS REGARDING SAME			

RESPONSEAssistant Commissioner for Patents
Washington D.C. 20231

Dear Sir:

The Office Action mailed October 4, 2002 has been received and reviewed. The Examiner set a shortened statutory period for reply of three-months, making the three-month response date January 4, 2003. As January 4, 2003 was a Saturday, in accordance with 37 CFR §1.7, the response due date was extended to Monday, January 6, 2003.

No claims were amended. Claims 1, 6-24, 27, and 29-58 are pending. Reconsideration and withdrawal of the rejections are respectfully requested.

Drawings

Applicants respectfully request consideration and approval of amended Figures 3 and 11, submitted with Applicants response to the November 8, 2001 Office Action.

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For: PROCESS VARIABLE GAUGE INTERFACE AND METHODS REGARDING SAME**The 35 U.S.C. §103 Rejection****Claims 1, 6, 9-19, 24, 29, 33-44, and 58**

The Office Action rejected claims 1, 6, 9-19, 23-24, 29, 33-48 and 58 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,675,147 to Schaefer et al. (hereinafter "Schaefer") in view of U.S. Patent No. 5,375,199 Harrow et al. (hereinafter "Harrow"). The Examiner's statements for the rejection of claims 23 and 45-48, however, relied upon U.S. Patent No. 5,631,825 to van Weele et al, in addition to Schaefer and Harrow. As such, Applicants address the rejection of claims 23 and 45-48 with the rejection of claims 20-22 below; such claims were rejected under 35 U.S.C. §103(a) as being unpatentable over Schaefer in view of Harrow and van Weele. As for the rejection of claims 1, 6, 9-19, 24, 29, 33-44 and 58 under 35 U.S.C. §103(a) as being unpatentable over Schaefer in view of Harrow, Applicants respectfully traverse the rejection of the claims as follows.

In claims 1, 24, and 58 Applicants teach a graphical user interface and/or a method to provide such an interface, for providing real-time process information to a user with regard to a process that is operable under control of one or more process variables. The graphical user interface includes a scale extending along a gauge axis, one or more bars that extend along the gauge axis, and a graphical shape displayed along the gauge axis. The one or more bars include a first bar and a second bar extending along the gauge axis. A first end of the first bar is representative of an engineering hard high limit for the process variable and a second end of the first bar is representative of an engineering hard low limit for the process variable. A first end of the second bar is representative of an operator set high limit for the process variable and a second end of the second bar is representative of an operator set low limit for the process variable. The graphical shape is representative of a current value of the process variable that is provided to the graphical user interface. Claim 58 further provides that the second bar extends along the gauge axis within the first bar and that user manipulation elements are movable to change one or more of the high and low process limit values.

Applicants respectfully submit that Schaefer and Harrow fail to teach or suggest all the claim limitations of claims 1, 24, and 58. For example, Schaefer and Harrow fail to teach or

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suggest a first bar and a second bar that both extend along the same gauge axis, as provided in claims 1, 24, and 58. The Office Action states that "[t]he differences between Schaefer et al. and the claims is a second bar extending along the gauge axis, wherein a first end of the second bar is representative of an operator set high limit for the process variable and a second end of the second bar is representative of an operator set low limit for the process variable" but that "Harrow et al. teaches the second pair of high and low limit elements (figure 13A, 206, 208, column 2, lines 38—44, column 19, lines 1-10)." Applicants respectfully submit that Harrow fails to teach what is suggested in the Office Action.

In contrast to what is asserted in the Office Action, the cited portion of Harrow only teaches an expanded single limit value, where there is only one limit value past which an alarm will sound (e.g., a value of "46", and not the value of "26", in Fig. 13A of Harrow), and not a bar having ends representative of operator set high and low limits. The portion of Harrow cited by the Office Action provides an interactive icon "200" in an "expanded state" in FIG. 13A. The slider "202" of the interactive icon 200 can be moved to change the values but not the width of the value range (Col. 18, line 67 through Col. 19, line 9). The range of values can be changed (Col. 17, line 68 – Col. 18, line 2), but in its default condition "the indicator bar 204" provides a single crossing threshold represented by a thin line (Col. 18, lines 12-16). Thus, the indicator bar 204 provides a single limit value. For example, 206 in figure 13A of Harrow indicates that "46" is the value at which "SOUND ALARM WHEN VALUE RISES ABOVE", and 208 in figure 13A indicates that "26" is the value at which "CANCEL ALARM WHEN VALUE FALLS BELOW". As such, the values shown at 206 and 208 of Harrow represent an expanded single limit value.

Thus, Harrow provides "a single crossing threshold" regardless of the expanded value of the second interactive icon, and not a second bar having a first end representative of an operator set high limit for the process variable and a second end representative of an operator set low limit for the process variable, as recited in claims 1, 24, and 58. As such, Schaefer and Harrow fail to teach or suggest, besides other things, both a first bar and a second bar that extend along the same gauge axis, as recited in claims 1, 24, and 58.

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In addition, Schaefer and Harrow fail to teach or suggest additional elements recited in claim 58. For example, claim 58 recites that the second bar extends along the gauge axis within the first bar. The Examiner, however, fails to state that Schaefer and Harrow teach or suggest that "the second bar . . . extends along the gauge axis within the first bar . . .", as recited in claim 58. As such, the cited documents fail to teach or suggest all the elements of claim 58.

Applicants further submit that the Examiner has failed to clearly identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. The Examiner asserts that it "would have been obvious to one of ordinary skill in the art . . . to modify the gauge axis and the graphical shape taught by Schaefer et al. to include the user defining high and low limits of Harrow et al., in order to provide a dragging the slider portion of the second interactive icon into the top or bottom of the underlying graphic display of data cause the scale of the underlying data to expand or contract so that any value on the underlying display of graphical data may be set, as taught by Harrow et al." Applicants respectfully submit that they are unable to fully understand what the Examiner asserts is the motivation to combine the recited documents in the statement "in order to provide a dragging the slider portion of the second interactive icon into the top or bottom of the underlying graphic display of data cause the scale of the underlying data to expand or contract so that any value on the underlying display of graphical data may be set, as taught by Harrow et al." As such, Applicants traverse this assertion as not providing adequate motivation and ask the Examiner for clarification so Applicants have a chance to more fully respond thereto.

With respect to claims 6, 9-19, 29, and 33-44, Applicants respectfully submit that these claims are also patentable as further limitations of patentable base claims 1 and 24. Furthermore, claims 6, 9-19, 29, and 33-44, besides others, are each patentable over Schaefer and Harrow based on the subject matter recited in each of the claims.

For example, with respect to claims 6 and 29, Applicants respectfully traverse the rejections. The Examiner asserts that "Harrow et al. teaches the second bar extending along the

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gauge axis representative of operator set high and low limits for the process variable (figure 13A, 206, 208, column 2, lines 38-44, column 19, lines 1-10)". However, Schaefer and Harrow fail to teach or suggest that a second bar extends along a gauge axis within a first bar, as recited in claims 6 and 29. As such, the cited documents fail to teach or suggest all the elements of claims 6 and 29.

In addition, the Examiner has failed to identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, for one skilled in the art to modify the reference or to combine references, so as to arrive at the subject matter recited in claims 6 and 29.

For example, with respect to claims 11, 12 and 35-37, Applicants respectfully traverse the rejections and repeat the arguments presented in their response to the Office Action dated 8 November 2001. In addition, Applicants reemphasize that nothing in Schaefer teaches or suggests that pointer flags are draggable along a gauge axis to change engineering hard limits. The portion of Schaefer cited by the Examiner appears only to recite generating, normalizing and locating the actual values of the operating parameters along the vertices of the polygon.

In addition, the Examiner has failed to identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, for one skilled in the art to modify the reference or to combine references, so as to arrive at the subject matter recited in claims 11, 12 and 35-37.

For example, with respect to claims 14 and 39, Applicants respectfully traverse the rejections and repeat the arguments presented in their response to the Office Action dated 8 November 2001. Applicants reemphasize that the cited portion of Schaefer relates to a "VECT A' subroutine for determining the analog scaling", but does not teach or suggest that the graphical user interface includes an additional graphical shape, as recited in claims 14 and 39. In addition, figure 5 of Schaefer fails to teach the subject matter recited in claims 14 and 39. Fig. 5 of Schaefer shows "a view of a graphical display" that indicates "the presence of an abnormality in the operation of the PWR plant illustrated in FIG. 3" (Col. 5, lines 30-34). In Fig. 5, none of the individual spokes (1 through 8) show an additional graphical shape displayed along the gauge

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axis. Schaefer uses the same shapes along the spokes in the graph of Fig. 5 as are used in the graph of Fig. 3. As such, Schaefer fails to teach or suggest the subject matter recited in claims 14 and 39.

For example, with respect to claim 19, Applicants respectfully traverse the rejection. In the rejection, the Examiner asserts "Schaefer et al. discloses a background of a region adjacent the one or more bars along the gauge axis is of a color when the graphical shape representative of the current value of the process variable is outside the high and low process limit values, and further wherein the region is representative of engineering physical limits of the process variables (column 9, lines 39-66). It is inherent that the user low and high limit values would be inside the engineering high and low limits since they are set for safety. Therefore, it is easy to understand that the graphical shape representative of the current value of the process variable is outside of the high and low process limit values."

Schaefer recites that "when the actual value of a parameter equals or exceeds a limit value, the associated tick mark is displayed in red [but,] . . . the vertice of the polygon representing that parameter will be located at the tic mark . . ." (col. 9, lines 47-51). Thus, the vertice of the polygon representing the parameter is at the tic mark even when the parameter exceeds the limit value. Schaefer, however, fails to teach or suggest that the graphical shape representative of the current value of the process variable is outside of the high and low process limit values, as recited in claim 19. As such, Schaefer fails to teach or suggest the subject matter recited in claim 19.

As for the Examiner's assertion that "it is inherent that the user low and high limit values would be inside the engineering high and low limits since they are set for safety. Therefore, it is easy to understand that the graphical shape representative of the current value of the process variable is outside of the high and low process limit values." Applicants respectfully submit that even if this were true for argument sake, this still does not teach or suggest that a background of a region adjacent the one or more bars along the gauge axis is of a color when the graphical shape representative of the current value of the process variable is outside of the high and low

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process limit values, and further where the region is representative of engineering physical limits of the process variable, as recited in claim 19.

For example, with respect to claim 33, Applicants respectfully traverse the rejection. Applicants respectfully repeat the argument presented above for claims 1, 24, and 58 in support of the position that Harrow fails to teach or suggest a user manipulation element that is movable to change one or more high and low process limit values, as recited in claim 33. As discussed above, Harrow only teaches an expanded single limit value, and not a bar having ends representative of high and low process limit values. As such, Harrow fail to teach or suggest all the elements recited in claim 33.

For example, with respect to claim 44, the Examiner asserts that "Schaefer et al. also teaches determining whether the current value of the process variable is outside of the set of high and low process limit values and displaying a graphical element representative of engineering physical limits of the process variable when the current the graphical shape is positioned outside of the parallel lines when the value for the corresponding process variable is outside the high and low process limit values by a predetermined percentage (figure 1, 16, column 8, lines 36-59). In is inherent that the user low and high limit values would be inside the engineering high and low limits since they are set for safety." Applicants traverse the rejection.

Schaefer recites that "[t]he top level PSSD display . . . is a graphic representation of the status of the critical safety concerns . . . [where] [a]n example of such a display is illustrated in FIG. 1 . . . [where] [t]he points 9 through 16, which are all a fixed distance from common origin 0, represent the target or reference value of the associated parameter or parameters" (Col. 8, lines 30-41). In contrast, Applicants teach that the engineering physical limits recited in claim 44 are "limit values that define the physical limits of a piece of equipment or instrumentation . . . [and] represent the widest possible range of meaningful quantification of a process variable" (page 28, lines 7-11). So, Schaefer recites a single point that represent a "target or reference value", while Applicants teach the physical limit values of a piece of equipment or instrument. Thus, the recited portion of Schaefer fails to teach or suggest all the elements recited in claim 44.

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With respect to claims 9, 10, 13, and 15-18, Applicants respectfully traverse the Examiner's assertions and respectfully repeat the arguments presented for claim 1 in support of the patentability of such claims.

For claims 34, 38, and 40-43, Applicants respectfully traverse the Examiner's assertions and respectfully repeat the arguments presented for claim 24 in support of the patentability of such claims.

Based on at least the forgoing reasons, the Office Action fails to establish a *prima facie* case of obviousness for the rejection of claims 1, 6, 9-19, 24, 29, 33-44 and 58. Applicants respectfully request reconsideration and allowance of claims 1, 6, 9-19, 24, 29, 33-44 and 58.

Claims 20-23, and 45-48

The Office Action further rejected claims 20-22 under 35 U.S.C. 103(a) as being unpatentable over Schaefer in view of Harrow and further in view of U.S. Patent No. 5,631,825 to van Weele et al. (hereinafter "van Weele"). Claims 23, and 45-48 were asserted to be rejected under 35 U.S.C. §103(a) as being unpatentable over Schaefer in view of Harrow. However, the Examiner's statements for the rejection of claims 23, and 45-48 relied upon van Weele, in addition to Schaefer and Harrow. As such, Applicants address the rejection of claims 23, and 45-48 with the rejection of claims 20-22. Applicants respectfully traverse the rejection of claims 20-23 and 45-48, as follows.

With respect to claims 20-23 and 45-48, Applicants respectfully submit that these claims are patentable as further limitations of patentable base claims 1 and 24. Furthermore, claims 45-48 are each patentable over Schaefer, Harrow and van Weele based on the subject matter recited in each of the claims.

For example, with respect to claim 45, the Examiner asserts that "van Weele et al. demonstrates displaying a graphical element representative of engineering physical limits of the process variable includes displaying background region adjacent the one or more bars along the

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gauge axis in a particular color representative of engineering physical limits (column 6, lines 30-65).” Applicants traverse the rejection.

Column 6, lines 30-65 of van Weele recites, in part, that the “operator station . . . may also include a graphical indicator of the current overall status of the selected SEQUENCE of the process represented as a Critical Success Factor (CSF) indicator which is a function of preselected parameters associated with the process . . . [where] the CSF indicator may be represented graphically as a circle divided into two contrasting shades forming a pie chart” “The operator station . . . also preferably includes other graphical indicators . . . which indicate the status of selected process parameters in a standard format . . . these graphical indicators are color coded to indicate relative levels of criticality” (Col. 6, lines 41-48). In contrast, Applicants teach displaying a background region adjacent one or more bars along a gauge axis in a particular color representative of engineering physical limits. While van Weele recites that graphical indicators are color coded, van Weele fails to teach or suggest that a background region adjacent the one or more bars along the gauge axis is displayed in a particular color that is representative of the engineering physical limits, as recited in claim 45. The cited portion of Schaefer (column 9, lines 39-53), furthermore, does not resolve the shortcomings of van Weele.

Finally, the Examiner has also failed to identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, for one skilled in the art to modify the reference or to combine references, as asserted in the rejection of claim 45.

Applicants respectfully traverse the rejection of claims 46 and 47. Applicants respectfully submit that the Examiner has failed to identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, for one skilled in the art to modify the reference or to combine references, as asserted in the rejection of claims 46 and 47.

With respect to claim 48, the Examiner asserted that van Weele recited the elements of claim 48 in figures 20 and 21, and at column 14, lines 1-50. Applicants respectfully traverse the rejection, and respectfully submit that the Examiner has failed to identify some suggestion or

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motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, for one skilled in the art to modify the reference or to combine references, as asserted in the rejection of claim 48.

Based on at least the forgoing reasons, the Office Action fails to establish a *prima facie* case of obviousness for the rejection of claims 20-23 and 45-48. Applicants respectfully request reconsideration and allowance of claims 20-23 and 45-48.

Allowable Subject Matter

Applicants acknowledge the Examiner's indication that claims 49-57 are allowed. In addition, Applicants acknowledge the Examiner's indication that claims 7, 8, 27 and 30-32 are objected to as being dependent on a rejected base claim, but that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Summary

It is respectfully submitted that the pending claims 1, 6-24, 27, and 29-58 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.